

### **REMARKS**

Upon entry of this amendment, claims 1 and 3 - 19 are all the claims pending in the application. Claim 2 has been canceled by this amendment. Claims 1, 3 - 6, and 9 - 17 have been amended. No new matter has been added. In view of the above amendments and the following remarks, reconsideration and further examination are requested.

Support for these amendments can be found for example, in canceled claim 2, Figures 1a, 1b and 2a.

#### **Claim Rejections under 35 U.S.C. § 112, second paragraph**

Claims 4, 9, 10 and 12 - 17 have been rejected under 35 U.S.C. § 112, second paragraph as being indefinite. In particular, the claims were rejected as being indefinite.

Applicants have amended the claims in a manner to overcome this rejection. Accordingly, Applicants respectfully request that the rejection be reconsidered and withdrawn.

#### **Claim Rejections under 35 U.S.C. § 102/§ 103**

Claims 2, 3, 7, 18 and 19 have been rejected under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 4,843,238 to Nishioka. Claims 1 and 6 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishioka in view of US Patent No. 4,843,238 to Livesay. Claim 8 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishioka in view of US Patent No. 6,225,193 to Simpson et al. Claim 11 has been rejected under

35 U.S.C. § 103(a) as being unpatentable over Nishioka in view of US Patent No. 7,038,290 to Li. Applicants respectfully traverse these rejections on the following basis.

In the present case, each and every element of the rejected claims is not either expressly or inherently described in the Nishioka reference and the combination of Nishioka and Livesay fails to teach or suggest all the features of the claims for the following reasons.

Independent claim 1 recites a combination of elements, *inter alia*:

“implanting gas ions on a substrate in a desired pattern to form a blister having a dome-shaped swelling in a specified depth range in the substrate, and wherein a two-dimensional pattern is formed by

destroying the blister by electron irradiation or by ion irradiation to form a two-dimensional pattern with a specified depth.” [*Emphasis added*]

As independent claim 2 has been cancelled and the features have been incorporated into claim 1, the rejection of claim 2 is deemed moot.

Accordingly, a blister with a desired pattern is formed in a specified depth range by implanting gas ions on a substrate. Thus, a concave portion of an undulation with a specified depth is formed by destroying the blister by irradiation.

Nishioka discloses a method for identifying a blistered film in layered films. In column 4, lines 22 - 46, a blister 300 is formed in layered films 200 formed on a substrate 100. A focused ion beam 400 having a reduced cross section and including ions is irradiated on the layered films 200.

In contrast with the features recited in amended independent claim 1, Nishioka neither discloses or suggests implanting gas ions on a substrate to form a blister with a desired pattern and a specified depth and destroying the blister to form a two-dimensional pattern with a specified depth.

The Examiner cites Livesay in an attempt to cure the deficiencies of Nishioka regarding electron irradiation.

Livesay teaches uniformity correction for large area electron source. However, even *assuming arguendo* that Livesay teaches electron irradiation, the reference neither discloses or suggests implanting gas ions on a substrate to form a blister with a desired pattern and a specified depth and destroying the blister to form a two-dimensional pattern with a specified depth.

The Examiner cites Simpson et al. in an attempt to cure the deficiencies of Nishioka regarding different types of irradiation.

Simpson et al. teaches method of cleaving a semiconductor wafer including implanting and annealing resulting in exfoliation. However, even *assuming arguendo* that Simpson et al. teaches different types of irradiation, the reference neither discloses or suggests implanting gas ions on a substrate to form a blister with a desired pattern and a specified depth and destroying the blister to form a two-dimensional pattern with a specified depth.

The Examiner cites Li in an attempt to cure the deficiencies of Nishioka regarding the recited gases.

Li teaches an integrated circuit device. However, even *assuming arguendo* that Li teaches the recited gases, the reference neither discloses or suggests implanting gas ions on a

substrate to form a blister with a desired pattern and a specified depth and destroying the blister to form a two-dimensional pattern with a specified depth.

Accordingly, Livesay, Simpson et al. and Li fail to cure the deficiencies of Nishioka. Thus, for these reasons, a person having ordinary skill in the art clearly would not have found it obvious to modify Nishioka, or to make any combination of the references of record, in such a manner as to result in or otherwise render obvious the present invention of claim 1.

Claims 3 - 19 depends from claim 1 and are therefore considered patentable at least by virtue of their dependency.

Therefore, Applicants respectfully request that these rejections be withdrawn.

#### **Allowable Subject Matter**

Applicants thank the Examiner for indicating that claim 5 is allowed. However, although claim 5 has been made dependent, it is still deemed allowable.

#### **PTO-892**


Applicants wish to note that Simpson et al. and Li were not cited on the PTO-892. Accordingly, Applicants respectfully request that the Examiner cite these references on a PTO-892 in the next Office Action.

### **Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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